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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,424	10/22/2003	Michael S. Kaplan	M61.12-0988	6179
27366 7590 02/13/2008 WESTMAN CHAMPLIN (MICROSOFT CORPORATION) SUITE 1400 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3319			EXAMINER COLUCCI, MICHAEL C	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 02/13/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/691,424

Applicant(s)

KAPLAN ET AL.

Examiner

Michael C. Colucci

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/22/2003
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### Response to Arguments

Applicant's arguments filed 10/12/2007 have been fully considered but they are not persuasive. In response to arguments (pages 8-11):

Argument 1 (page 8 paragraph 4):

- "Applicants respectfully submit that Lisle neither teaches nor suggests a compression type or compression as defined in the specification and recited in each of the independent claims."

Response to argument 1:

Examiner takes the position that Lisle teaches collation and sorting of characters in sequence, where Lisle teaches a collation order (FIG. 2), an assigned hierarchical sorting collation order with special characters first in a defined order that is known to users of such systems, followed by the alphabet upper and lower case and last, by the numerals in the highest collation order of sequence. The collation order may be viewed as equivalent to an overall "alphabetic order" for the possible entries to be sorted. The actual dictionary entries for each dictionary are thus collated first and sorted into the collation order. Each dictionary segment thus begins with some low collation order entry of a given length and a given entry word (or number or character as the case may be) and the segment index ends with the highest collation order entry that appears within that segment of the dictionary being used. The dictionary segment index is used to speed dictionary search time using binary search techniques as will be described (col 15 lines 45-63).

Argument 2 (page 11 paragraph 1):

- "Applicants could find no evidence of any teaching related to the type of compression recited in each of the independent claims."

Response to argument 2:

Examiner takes the position that Lisle teaches collation and sorting of characters in sequence, where Lisle teaches a collation order (FIG. 2), an assigned hierarchical sorting collation order with special characters first in a defined order that is known to users of such systems, followed by the alphabet upper and lower case and last, by the numerals in the highest collation order of sequence. The collation order may be viewed as equivalent to an overall "alphabetic order" for the possible entries to be sorted. The actual dictionary entries for each dictionary are thus collated first and sorted into the collation order. Each dictionary segment thus begins with some low collation order entry of a given length and a given entry word (or number or character as the case may be) and the segment index ends with the highest collation order entry that appears within that segment of the dictionary being used. The dictionary segment index is used to speed dictionary search time using binary search techniques as will be described (col 15 lines 45-63).

### **Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 6, 11, 12, 16, 18, 23, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lisle et al US 4,843,389 (hereinafter Lisle).

Re claims 1 and 6, Lisle teaches a computer-readable medium having computer-executable instructions for performing steps for building a symbol table for storing sort weights for a plurality of linguistic symbols used in a plurality of languages supported by a computer system (col 15 lines 45-63), comprising:

constructing the symbol table (col 19 lines 36-59) to contain a list of code points (col 20 lines 35-56) each uniquely identifying one of the symbols, and a sort weight for the symbol identified by said each code point (col 15 lines 45-63);

providing a plurality of compression tables (col 19 lines 36-59), each compression table pertaining to one of the supported languages (col 5 lines 21-50) and having a compression type and containing compressions of symbols of that compression type (col 15 lines 45-63);

for each code point in the symbol table (col 20 lines 35-56), sorting the compression tables (col 19 lines 36-59) to identify a highest compression type our compressions beginning with the symbol (col 15 lines 45-63) identified by said each code point (col 20 lines 35-56);

storing in the symbol table a tag for each code point to indicate said highest compression type for said each code point (col 20 lines 35-56).

NOTE: Tagging a code point is construed to be both functionally equivalent and equally effective as ranking or ordering a code point or address in memory for the purposes of a hierarchical classification.

Re claims 11, 16, 18, and 23, Lisle teaches a computer-readable medium having computer-executable instructions for performing steps for a computer search program to carry out a linguistic sorting operation (col 15 lines 45-63, comprising:

receiving an input string containing a plurality linguistic symbols (col 6 lines 42-58) used in a given language (col 15 lines 45-63);

for a first symbol in a combination of symbols in the input string (col 15 lines 45-63), referencing a symbol table (col 20 lines 35-56) to obtain a highest compression type for compressions beginning with said first symbol (col 19 lines 36-59), the symbol table having a list of code points each uniquely identifying a symbol and a sort weight (col 15 lines 45-63) for the symbol identified by said each code point (col 20 lines 35-56);

performing a binary search (col 16 lines 6-27) through each of a plurality of compression tables (col 19 lines 36-59) containing compressions for the given language to find a matching compression that matches said combination of symbols in the input string (col 16 lines 6-27), wherein the plurality of compression tables are searched in a

descending order (col 15 lines 45-63) of compression types of the compression tables (col 19 lines 36-59) starting with a compression table having a compression type equal to said highest compression type for said first symbol (col 15 lines 45-63).

NOTE: Tagging a code point is construed to be both functionally equivalent and equally effective as ranking or ordering a code point or address in memory for the purposes of a hierarchical classification.

Re claims 12 and 24, Lisle teaches a computer-readable medium as in claim 11, wherein the compressions in each of the compression tables (col 19 lines 36-59) are sorted according to code points for symbols forming the compressions (col 15 lines 45-63).

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2, 5, 7, 10, 15, 17, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lisle et al US 4,843,389 (hereinafter Lisle) in view of Ho 7,130,470 B1 (hereinafter Ho).

Re claim 2, 7, 15, and 22, Lisle fails to teach the (Ho col 1 line 52 – col 2 line 3).

Ho teaches that in current multilingual database architectures, Unicode is often used to depict characters. Unicode is a superset of the ASCII character set that uses two bytes for each character rather than one. Because Unicode is able to handle 65,536 character combinations rather than just 256, it can house the alphabets of most of the world's languages. Unicode is a desirable character set because it easily enables a database user to enter in records in a number of different languages. Alphabetic sort orders are performed by determining a character's sort weight by accessing a collation weight table. A collation weight table provides a numerical value for a character for sorting. For example, in a collation weight table the letter "A" may have a sorting weight of 10 and the letter "B" may have a sorting weight. When the sort order performs the sort, "A" will be ordered before "B" because it has a smaller value. The collation weight table can have a sort weight for every Unicode character, thus allowing for sorting in multiple languages.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention using a Unicode standard for assigning code points to symbols. Using Unicode would allow for proper collation, decomposition, and manipulation of text for various writing systems.

Re claims 17 and 19, Lisle teaches the computer-readable medium as in claim 11, having further computer-executable instructions for storing a sort weight (col 15 lines 45-63) for the matching compression (col 16 lines 6-27).



Re claims 5 and 10, Lisle teaches the computer-readable medium as in claim 1, further comprising computer-executable instructions for performing steps of sorting compressions (col 15 lines 45-63) in each of the compression tables based on combinations of code points (col 20 lines 35-56) of the compressions in said each compression table (col 19 lines 36-59).

### **Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4, 8, 9, 13, 14, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lisle et al US 4,843,389 (hereinafter Lisle) in view of Edberg 5,873,111 A (hereinafter Edberg).

Re claims 3, 8, 14, and 21, Lisle teaches sort weight of the symbol (col 15 lines 45-63) identified by said each code point (col 20 lines 35-56).

However Lisle fails to teach the computer-readable medium as in claim 1, wherein the tag for each code point is stored as a portion (col 12 lines 7-12)

Edberg teaches character attributes that may be organized in a particular collation order such that information located earlier in the list indicate a higher priority level of significance. For example, if "number" comes before "letter" in the order of the character attributes in class 40, then any number will be collated before any letter, such

that "10" will be listed before "apple" in a list of information which has been collated by the sample ordering of category 32a. Alternatively, the character attributes 46 may be tagged with a prefix 43. The lower the prefix 43 of a character attribute 46, the earlier it places in the collation order. For example, in the Unicode category 32c, Latin letters would list before Cyrillic letters in a collation order.

Re claims 4 and 9, Lisle teaches computer-readable medium as in claim 3, wherein the sort weight of the symbol identified by said each code point (col 20 lines 35-56) comprises a case weight value (col 15 lines 45-63), and wherein the tag for said each code point is stored as part of the case weight value for said each code point (col 20 lines 35-56).

Re claims 13 and 20, Lisle teaches computer-readable medium as in claim 12, wherein each code point in the symbol table includes a tag indicating a highest compression type (col 19 lines 36-59) for said each code point (col 20 lines 35-56), and wherein said step of referencing retrieves the tag for the code point identifying said first symbol (col 15 lines 45-63).

### **Conclusion**

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Michael Colucci Jr.  
Patent Examiner  
AU 2626  
(571)-270-1847  
[Michael.Colucci@uspto.gov](mailto:Michael.Colucci@uspto.gov)

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER